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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/022,553	12/17/2001	Zhuan Ye	CR00299M(72462)	3839

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EXAMINER	
SZYMANSKI, THOMAS M	

ART UNIT	PAPER NUMBER
2183	

DATE MAILED: 06/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/022,553	YE ET AL.	
	Examiner	Art Unit	
	Thomas Szymanski	2183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/31/2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-24 have been examined.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The subject matter as claimed does not relate to anything that is "concrete and tangible". All of the subject matter as claimed is simply a formulation that is not stated as being contained within anything of the concrete and tangible means such as a computer as is necessary.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiskis et al U.S. Patent No. 6,526,427, and further in view of Walsh U.S. Patent No. 5,646,618.

7. Claim 1: Chiskis et al teaches the following:

a. Providing a starting state of the pseudorandom sequence of items (Col 4 lines 43-45) which pseudorandom sequence of items has a corresponding finite number of potential states, (Col 5 lines 7-11). A starting state is provided by the decomposition of the desired end state for means of calculation.

b. Providing a first mask for generating a next state of the pseudorandom sequence of items (Col 4 lines 27-39)

c. Identifying a desired subsequent state of the pseudorandom sequence of items (Col 4 lines 43-45 Fig 3,6)

d. Providing a plurality of additional masks for generating corresponding subsequent states of the pseudorandom sequence of items (Col 4 lines 27-39)

e. Using at least the starting state of the pseudorandom sequence of items and at least one of the plurality of additional masks to calculate the desired subsequent state of the pseudorandom sequence of items. (Col 4 lines 27-39)

8. Chiskis et al fails to teach an uneven distribution of subsequent states, However Walsh teaches this limitation.

f. Corresponding subsequent states are unevenly distributed (Walsh Col 10 lines 40-62)

9. As set forth by Walsh the use of an uneven method of placement, or searching for the use of finding a final step is a desirable feature.

10. It would have been obvious to one of ordinary skill in the art to substitute the searching method of the Walsh system into that of the Chiskis et al system for Walsh's stated motivation (Col 10 lines 59-52) of cheaper improved computation. The combined system hence would provide for that quicker improved computability and subsequently would need less system resources to provide for the same functionality.

11. Claim 2: subsequent states are distributed substantially logarithmically throughout the finite number of potential states for the pseudorandom sequence of items. (Walsh Col 10 lines 40-62).

12. Claim 3: plurality of additional masks comprises providing between 5 and 15 additional masks (Col 7 lines 8-21) Chiskis et al denotes the number of masks that are calculated prior to implementation are dependent upon the specific system.

13. Claim 4: identifying an offset from the starting state and adding the offset to a sequential position of the starting state of the pseudorandom sequence of items. (Col 4

lines 57-67 equation 1) As given within the Chiskis system the offset or delay is computationally implemented as given within the above noted equation in a decomposed manner upon which addition is used.

14. Regarding claims 5, 7, 10: Chiskis et al teaches the following:

c. Moving from the starting state to the desired subsequent state by sequentially selecting interim pseudorandom sequence generating polynomials that correspond to multi-state moves of ever decreasing size until one of:

i. The desired subsequent state is attained', and

ii. Only next-state moves are made before attaining the desired subsequent state.

15. Walsh provides for such searching or distribution by the manner of a logarithmic relation. By the nature of such a system the next move would be constituted by a move of an ever-decreasing size. Additionally, since it is not feasible to perform a move of less than one state a next state move would occur once a situation such as that is encountered.

16. Regarding claims 6, 8, 9:

b. using at least one of the additional pseudorandom sequence generating polynomials to generate at least one of the interim pseudorandom sequence generating polynomials.

17. Chiskis provides for this system (Col 4 lines 27-39, Col 8 lines 1-26), as denoted the system starts with a plurality of masks that are then used to calculate subsequent masks as is necessary in order to compute the final desired state.

18. Regarding claims 11, 12: using given masks to generate further masks iteratively. (Col 4 lines 27-39), as noted Chiskis uses the given masks to generate further masks which are then used in a subsequent same manner.

19. Claim 13: using the specific pseudorandom sequence generating polynomial to generate the pseudorandom sequence of items that corresponds to the desired subsequent state of the pseudorandom sequence of items. (Col 4 lines 27-39) The purpose of generating subsequent masks is to iteratively provide for the generation of a specific mask that allows for such a means, as such this is anticipated by Chiskis et al.

20. Claim 14:

c. providing between 5 and 25 (Col 7 lines 8-21) additional pseudorandom sequence generating polynomials for generating corresponding subsequent states of the pseudorandom sequence, wherein the corresponding subsequent states are unevenly distributed throughout the 32,767 (Col 5 lines 1-15) potential states for the pseudorandom sequence of items;

21. Chiskis et al provides for a system within which the number of potential states within a sequence is the same as provided for above within the specific implementation.

22. Claim 15: the pseudorandom sequence comprises a pseudorandom sequence of binary digits. It is well known within the art that a PN sequence is composed of binary digits (Col 1 lines 15-20), as such this claim is anticipated by Chiskis et al.

23. Regarding claims 16, 17, 19:

d. using the at least one pseudorandom sequence generating polynomial to generate a first interim pseudorandom sequence generating polynomial that can calculate a first

interim pseudorandom sequence of items that corresponds to a first interim subsequent state of the pseudorandom sequence of items, which first interim subsequent state is more proximal to the desired subsequent state than the starting state. (Col 4 lines 45-50)

24. Chiskis et al provides for the system within which interim masks are calculated to provide for a subsequent mask that is more proximal as this is the purpose of the explained operation.

25. Claim 18: using a subsequently generated pseudorandom sequence generating polynomial to generate a final pseudorandom sequence of items that corresponds to the desired subsequent state of the pseudorandom sequence of items.

26. Chiskis et al anticipate that which is claimed herein as specified within the above arguments. The purpose of the stated system is that the final iteration produces the desired answer.

27. Regarding claims 20, 21, 22: using one of the additional pseudorandom sequence generating polynomials to generate a final pseudorandom sequence of items that corresponds to the desired subsequent state of the pseudorandom sequence of items.

28. Chiskis et al anticipate that which is claimed herein as specified within the above arguments. Within a system that generates iterations of a process a subsequent iteration provides for the final iteration that is the desired answer wherein the final iteration provides for the given sequence is the purpose of the implementation.

29. Claim 23: b. using slewing to achieve the desired subsequent state of the pseudorandom sequence of items

30. Chiskis et al anticipate that which is claimed herein. The use of slewing as a manner to provide this functionality is well known within the art, and as such one of ordinary skill could clearly recognize the use of such a system.

31. Claim 24:

a. a transceiver (Col 1 lines 14-20)

b. synchronization means operabily coupled to the transceiver, wherein the synchronization means includes:

c. first means for providing a starting state of a pseudorandom sequence of numbers comprising a synchronizing data stream compatible with a first base station in a code division multiple access wireless communications system, which pseudorandom sequence of numbers has a corresponding finite number of potential states and wherein each state of the pseudorandom sequence of numbers can be calculated by a corresponding pseudorandom sequence generating polynomial

d. second means for providing at least one pseudorandom sequence generating polynomial,

e. third means responsive to the first means for identifying a desired subsequent state of the pseudorandom sequence of numbers, which desired subsequent state comprises a synchronizing data stream compatible with a second base station in the code division multiple access wireless communications system (Col 1 lines 6-20)

f. fourth means responsive to the first means and the third means for using the at least one pseudorandom sequence generating polynomial to generate a first interim pseudorandom sequence generating polynomial that can calculate a first interim pseudorandom sequence of numbers that corresponds to a first interim subsequent state of the pseudorandom sequence of numbers, which first interim subsequent state is more proximal to the desired subsequent state than the starting state.

32. The technology disclosed herein and as laid forth by Chiskis et al is known within the art to be used within the means of radio devices. Further, one of common knowledge would recognize that any such device that is implemented within such an environment provides for means of a transceiver and further means of implementing the system of a PN mask and sequence generator as is necessary for the operation of a given device. All of that which is claimed herein and not discussed specifically is anticipated above and as such official notice is given relying on the above arguments that such material is known within the art. As such it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to disclose such a device.

Conclusion

33. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is reminded that in amending in response to a rejection of claims, the patentable novelty must be clearly shown in view of the state of art disclosed by the references cited and the objections made. Applicant must show how the amendments avoid such references and objections. See 37 CFR 1.111(c).

34. Miller et al U.S. Patent No. 6,556,555 has taught a method for calculating the PN generator mask.

35. Brown et al U.S. Patent No. 6,282,230 has taught a block PN generating circuit

36. Rueth et al U.S. Patent No. 5,228,054 has taught a PN sequence generator with offset adjustment.

37. Barron et al U.S. Patent No. 5,926,070 has taught an offset mask generator for a PN sequence generator.

38. Schooler et al U.S. Patent No. 6,667,708 has taught a method and system for a programmable code generator.

39. Byun U.S. Patent No. 6,445,728 has taught a method of establishing a search window size within a mobile network utilizing logarithms.

40. As provided within the IDS Peterson et al. "Introduction to Spread Spectrum Communications" was not considered, as no legible copy was available.

41. Inquiries concerning this communication or earlier communications from the examiner should be directed to Thomas M. Szymanski who can be reached at (571) 272-8574. The examiner's normal working schedule is between the hours 8:00am – 4:30pm (EST), Monday – Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse, can be reached at (571) 272-3838. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

42. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JL

David Y. Jung
Primary Examiner

D. J

A.U. 2134